Calendar No. 75

102D CONGRESS *1st Session*	SENATE	REPORT 102-48

MOTOR VEHICLE FUEL EFFICIENCY ACT

Mr. HOLLINGS, from the Committee on Commerce, Science, and Transportation, submitted the following

REPORT

together with

ADDITIONAL AND MINORITY VIEWS

OF THE

SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ON

S. 279

APRIL 25 (legislative day, APRIL 9), 1991.—Ordered to be printed

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ADDITIONAL AND MINORITY VIEWS

[To accompany S. 279]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 279) to amend the Motor Vehicle Information and Cost Savings Act to require new standards for corporate average fuel economy, and for other purposes, having considered the same, reports favorably thereon with amendments and recommends that the bill as amended do pass.

PURPOSE OF THE BILL

The primary purpose of this legislation is to increase the current corporate average fuel economy (CAFE) levels for passenger vehicles by 40 percent by the model year 2001. The bill would require an interim increase of 20 percent effective in model year 1996. Current fuel economy standards were enacted in 1975, and no increase has been mandated since 1985.

In addition, beginning in model year 1992, the bill would index to the cost of living index the civil penalties that may be assessed against manufacturers which fail to meet the standards. These penalty amounts have not been increased since enactment of CAFE requirements in 1975, and have been eroded by significantly inflation. Also, the bill would double the civil penalties assessed against those manufacturers which fail to meet the standards in more than two consecutive model years. It also would require studies by the

49-010

National Academy of Sciences (NAS) and the Department of Energy (DOE) to provide the Congress with information on technological potential and policy options for fuel economy standards in the period after 2001.

Background and Needs

Need for Fuel Economy

Congress enacted fuel economy standards in 1975, over the objections of the auto industry that such standards were impossible to meet, out of a concern for the energy security of the Nation. Despite its initial opposition, the industry's achievement has been impressive. Since the 1975 standards were enacted, the fuel economy of the fleet has doubled, with no loss of interior volume or performance.[1] Had this improvement not occurred, it is estimated that cars and light trucks in the United States would be consuming an additional 2.5 million barrels of oil per day, and drivers would be spending at least an additional $40 billion per year for gasoline.[2]

The current law required that the standards increase incrementally, and sometimes annually, until 1985 when the standards leveled off at 27.5 miles per gallon (mpg) for passenger automobiles. The 1975 law also permitted the Secretary of Transportation (Secretary) each year to raise or lower the statutory standard to the "maximum feasible level" of fuel economy. Between 1986 and 1989, the Secretary decreased the fuel economy standard, first to 26 mpg, and then to 26.5 mpg. During those years, manufacturers that had petitioned for decreases in the standards actually exceeded the reduced standards, and earned credits to be used for meeting the standards in future years.

The 1975 law also required that the Secretary establish fuel economy standards for other passenger vehicles, and the agency defined such vehicles as "light trucks," including small pickups, minivans, and jeep-type vehicles. The Secretary has established such standards, although the light truck standards have required little improvement over the years, and will require no improvement between 1991 and 1992.[3]

Since the enactment of the 1975 law, although the price of gasoline has declined, the Nation's energy security situation has not improved. For example, in some months in 1990, the United States imported over 50 percent of the oil it consumed.[4] Longer term data presents a similar basis for concern. The Energy Information Administration of the DOE predicts a 4 percent annual growth in net oil imports between 1988 and 2000. If this prediction is realized, imported petroleum will represent 55 percent of total annual oil consumption by the year 2000, substantially above the previous high of 47 percent in 1978, and higher than the percentage of imported oil

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[1] Testimony of Jay D. Hair, President, National Wildlife Federation, at Hearing of Senate Consumer Subcommittee on S. 279, Feb. 21, 1991, S. Hrg. 102-19 (hereafter S. Hrg. 102-19) at 115; testimony of Marc Ledbetter, Senior Associate, American Council for An Energy-Efficient Economy, S. Hrg. 101-129 at 237, 249.

[2] Testimony of Marc Ledbetter, Senior Associate, American Council for An Energy-Efficient Economy, S. Hrg. 102-19 at 128.

[3] 55 Fed. Reg. 12487 (Apr. 4, 1990).

[4] U.S. Department of Energy, Energy Information Administration.

used during the oil embargo or at the time of the enactment of the 1975 CAFE law.[5]

In January 1989, then-President Reagan informed the Congress under section 232 of the Trade Expansion Act that "petroleum imports threaten to impair the national security." The truth of this statement was clearly demonstrated when, in January 1991, the United States and its allies went to war in the Persian Gulf, in part to protect the oil fields in that region.

For the past two years, about $49 billion, or almost half, of the Nation's $108.6 billion trade deficit was due to oil imports.[6] This trade imbalance has obvious adverse effects on the national economy.

In addition to its national security and trade benefits, increased energy efficiency will insure that the country can save its most fragile and beautiful coastal and wilderness resources for future generations. For example, achieving a 40 miles per gallon new car average by 2001 would save, by 2010, 3.2 million barrels of oil each day—more than ten times the Interior Department's hoped-for daily production from the Arctic National Wildlife Refuge, which environmentalists now consider the Nation's premier wildlife refuge. In addition, these savings would eliminate each year the need for about 868 trips by supertankers the size of the Exxon *Valdez*.[7]

Moreover, since enactment of the 1975 law, scientists have become aware that energy efficiency is important to reduce the emission of carbon dioxide, which is a direct result of the burning of fossil fuels such as gasoline. Each gallon of gasoline used typically produces 18 pounds of carbon dioxide.[8] Carbon dioxide has been recognized as a "greenhouse gas," which contributes to a thermal blanket around the Earth.[9]

This blanket traps some of the infrared radiation which is emitted from the Earth's surface, leading to warming. Although there is uncertainty regarding the rate and magnitude of the warming, there is a scientific consensus that if the concentrations of greenhouse gases are increased significantly above current levels, then atmospheric temperatures will rise.[10] The atmospheric concentration of carbon dioxide has increased approximately 25 percent in the past 100 years, in part due to fossil fuel combustion as well as industrial and agricultural activities.[11]

Given the uncertainty regarding the timing and magnitude of any global warming, there also is uncertainty about how regional climate patterns may change.[12] However, many climate specialists

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[5] Letter from Linda Stuntz, Deputy Under Secretary, Policy, Planning and Analysis, Department of Energy, to Senator Richard Bryan, dated Nov. 7, 1989, at Answer to Question 1.

[6] U.S. Department of Commerce.

[7] Testimony of Jay D. Hair, President, National Wildlife Federation, at S. Hrg. 102-19 at 108; testimony of Brooks Yeager, Vice President, National Audubon Society before Senate Consumer Subcommittee, Sept. 7, 1989 (S. Hrg. 101-347), at 93, citing Watson, R. Oil and Conservation Resources Fact Sheet: A Least-Cost Planning Perspective, Natural Resources Defense Council, August 1988.

[8] Stuntz Letter, supra., at Answer to Question 2.

[9] Testimony of Richard D. Morgenstern, Director, Office of Policy Analysis, Environmental Protection Agency, before Senate Consumer Subcommittee, May 2, 1989; S. Hrg. 101-129 at 95.

[10] Id.

[11] Id.

[12] Id. at 99.

include on the list of possible consequences a rise of several feet in global sea levels and a consequent loss of 80 percent of coastal wetlands, a higher probability of drought and unacceptably high temperatures during growing season in certain areas, and the failure of many plant and animal forms.[13]

Transportation energy use accounts for about one-third of the energy impact on global warming, or about 20 percent of the possible total warming contribution worldwide.[14] Automobiles are the dominant component of transportation energy—about 60 percent of transportation energy use in the industrialized market economies of the Organization for Economic Cooperation and Development (OECD).[15] Of the approximately 5 billion total tons of carbon dioxide produced in the United States in 1985, transportation sector energy use was responsible for about 32 percent. Passenger car use accounts for about 46 percent of the transportation sector total, or about 14 percent of total U.S. emissions.[16] Carbon dioxide emissions from the U.S. transportation sector exceeded carbon dioxide emissions from all sources in each of the following countries or regions: Latin America, Japan, Middle East, West Germany, South and Southeast Asia, United Kingdom, Africa, and France.[17]

Although U.S. carbon dioxide emissions from vehicles make up a relatively small percentage of worldwide carbon dioxide emissions (about 4 percent), any single source in any single country will necessarily be a small proportion of the overall emissions. Because the total is made up of small percentages, no single country or source can claim legitimately that it is not part of the problem.[18] According to the Environmental Protection Agency (EPA), vehicle fuel economy improvements are an inherent part of any reasonable overall solution to global warming. Moreover, in the judgment of EPA, it would be in the U.S. interest to take fuel economy measures, even if other nations did not follow, because of the other environmental and energy security benefits that would accrue.[19]

Additionally, the Committee has received testimony to indicate that there is a correlation between increased automobile efficiency and lowered hydrocarbon and carbon monoxide emissions.[20] The transportation sector currently accounts for almost 30 percent of all U.S. hydrocarbon and nitrogen oxide emissions, which combine to form smog. Thus, increased efficiency may play a role in attaining healthful urban air.[21]

FUEL ECONOMY TRENDS

As stated, statutory passenger car fuel economy standards have not increased since reaching 27.5 mpg in 1985. Between 1986 and 1989, the Department of Transportation (DOT) used its discretion

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[13] Yeager testimony, supra. S. Hrg. 101-347 at 97.
[14] Morgenstern Testimony, supra., S. 101-129 at 100.
[15] Id.
[16] Stuntz Letter, supra., at Answer to Question 2.
[17] Testimony of James J. Mackenzie, Senior Associate, Climate, Energy and Pollution Program, World Resources Institute, before Senate Consumer Subcommittee Sept. 7, 1989, S. Hrg. 101-347 at 85.
[18] Morgenstern Testimony, supra., S. Hrg. 101-129 at 108.
[19] Id.
[20] Yeager Testimony, supra., S. Hrg. 101-347 at 93-4.
[21] Id.

to reduce the standards below 27.5 mpg. In recent years, the fuel economy of the fleet actually has declined. According to EPA, between 1988 and 1990 the fleet fuel economy will decline by 4 percent, with a corresponding increase of 6 percent in the weight of the fleet, and a 10 percent increase in horsepower.[22]

In addition, there has been very little improvement in the fuel economy of the light truck fleet since 1982. The fleet average fuel economy was 20.5 mpg in 1982, and is projected to be 20.9 mpg for 1990.[23] DOT has issued fuel economy standards for model year 1992, and required no increase over the 1991 standard, setting the fuel economy standard at 20.2 mpg.[24]

At the same time, light trucks are becoming an ever-larger proportion of light duty vehicles on the road, and are increasingly used for carrying passengers rather than cargo. In 1970, such vehicles represented only 15 percent of new light duty vehicle sales, while in 1989 and 1990 they represented about one-third of new light duty sales.[25] A 1987 survey by the Department of Commerce (DOC) found that 73 percent of light trucks are used for personal transportation—that is, for the same purpose as a car.[26]

While fleet fuel economy has been declining, there has been a rapid increase in vehicle miles traveled in the United States. Vehicle miles traveled is a measurement that reflects both the changes in the number of vehicles on the road and the number of miles each vehicle is driven. During the 1970–1980 period, vehicle miles traveled grew at a rate of 3.1 percent per year. Between 1980–1989, vehicle miles traveled grew at an annual rate of 3.4 percent.[27] Thus, despite a doubling of the fleet fuel economy since 1983, gasoline consumption actually has increased by 10 percent in that same time period.[28]

There are a wide variety of forecasts for the future growth in vehicle miles traveled. The Energy Information Administration of DOE predicts a 2.1 percent annual growth between 1988 and 2000.[29] The EPA model predicts about a 36 percent increase in vehicle miles traveled between the present and 2001.[30] As a result, EPA estimates that a corresponding 36 percent increase in the fuel economy of the new car fleet would be required to offset that growth in vehicles miles traveled and simply maintain the status quo in gasoline consumption.[31] DOT projects that vehicle miles traveled will double between 1988 and the year 2020.[32] The World

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[22] Murrell and Heavenrich, "Downward Trend in Passenger Car Fuel Economy—A View of Recent Data," U.S. Environmental Protection Agency, Office of Air and Radiation, Technical Report No. EPA/AA/CTAB/90-01 (January 1990) at 1.

[23] U.S. Department of Transportation, NHTSA, NEF-31, "Summary of Fuel Economy Performance Estimated on a Year-to-Year Basis." Compare 1982 summary with 1990 summary.

[24] 55 Fed. Reg. 12487 (Apr. 4, 1990).

[25] Testimony of Marc Ledbetter, supra., S. Hrg. 102-19 at 129.

[26] Bureau of the Census, U.S. Department of Commerce, "Truck Inventory and Use Survey" (1987), cited in Ledbetter testimony, supra., S. Hrg. 102-9 at 133 footnote 4.

[27] Stuntz letter supra., at Answer to Question 4.

[28] Mackenzie testimony, supra., S. Hrg. 101-347 at 75.

[29] DOE Energy Information Administration, "1989 Annual Energy Outlook," cited in Stuntz letter, supra., at Answer to Question 4.

[30] Letter from William Rosenberg, Assistant Administrator for Air and Radiation, EPA, to Senator Bryan, dated Dec. 21, 1989, at Answer to Question 4.

[31] Id., at Answer to Question 5.

[32] U.S. Department of Transportation, Discussion Paper on Intelligent Vehicle-Highway Systems, May 1989, at 3.

Resources Institute estimates that, even if the fuel economy standards in S. 279 were enacted and fully implemented, by the year 2010 gasoline use will have increased by 3 percent over 1986, due to increased vehicle miles traveled.[33]

EFFECTIVENESS OF FUEL ECONOMY STANDARDS

Notwithstanding the dramatic increases in the fuel economy of the fleet since enactment of CAFE standards, some continue to question the effectiveness of such standards in improving fuel economy. Testimony received by the Committee demonstrated, however, that in the current situation such standards are not only effective but necessary to achieve such increases.

Rising gasoline prices played a role in improving fuel economy over the last 15 years, since in such situations the market demands fuel economy as a higher priority. However, the historical record demonstrates that, even when gasoline prices fell, fuel economy continued to rise. This increase only can reasonably be explained by the existence of fuel economy standards.[34]

Additionally, although gasoline prices will continue to be an influence on fuel economy, it will be a diminishing influence as the fuel economy of the fleet increases. This is because the more fuel efficient the car, the smaller the fraction of operating costs attributable to fuel costs.[35] This is confirmed by the experience of other industrialized countries with gasoline prices much higher than the United States. Even in areas in which gasoline prices are two to four times higher, fuel economy remains in the high 20s and low 30s. For example, the International Energy Agency reports 1985 fuel economy of 31.4 mpg for West Germany (1988 gasoline price, $2.23 per gallon); 31.1 mpg for the United Kingdom ($2.63 per gallon); and 30.2 mpg for Japan ($3.58 per gallon).[36]

FEASIBILITY OF INCREASED FUEL ECONOMY

The increases required by the reported bill would require fleet fuel economy for passenger cars of approximately 34 mpg by 1996 and 40 mpg by 2001. For light trucks, the required fleet average would be approximately 25.5 mpg by 1996 and 29.8 mpg by 2001. However, the bill permits the Secretary to increase or decrease the standards within a stated range to achieve the "maximum feasible average level" of fuel economy. While the Secretary should use this authority only when absolutely necessary to meet circumstances not presently expected by the Committee, the Secretary has the authority to reduce the standards to the equivalent of the following approximate levels: 1996 cars 33 mpg; 1996 trucks—24.5 mpg; 2001 cars—37.3 mpg; 2001 trucks—27.7 mpg.

The established levels of fuel economy are believed by the Committee to be achievable utilizing technology currently available, with minimal effect on consumer choice or cost. That is, by using

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[33] MacKenzie testimony, supra., S. Hrg. 101-347 at 77.

[34] Ledbetter testimony, supra., S. Hrg. 101-129 at 241-2 and attachment C. This testimony demonstrates that gasoline prices have been falling since 1982, while fuel economy continued to rise until the late 1980s.

[35] Ledbetter testimony, supra., S. Hrg. 102-19 at 129; S. Hrg. 102-129 supra., at 243.

[36] Ledbetter testimony, supra., S. Hrg. 102-129 at 242.

improved technology in engines, transmissions, aerodynamics, and other areas, manufacturers can improve the fuel efficiency of the cars of all sizes that they produce during the next decade. Since they are given ten years to meet the improved standards, they will have time to put new technology in the fleet, and will not have to sell, as some have suggested, only small vehicles in order to meet the standards. On the contrary, these increased standards will encourage manufacturers to use the best fuel economy technology in all the cars they build, so that each size vehicle is as fuel efficient as possible.

In reviewing the data regarding feasible levels of fuel economy, it is useful to keep in mind that CAFE standards, both in current law and as required by S. 279, have considerable flexibility and do not necessarily require an actual fuel economy achievement of the level of the standard. For example, under current law, which continues under S. 279, manufacturers may receive considerable credit toward meeting CAFE standards by the manufacture of alternative fuel vehicles. A vehicle that runs only on an alternative fuel such as methanol, ethanol, or natural gas and achieves 26 mpg will be counted for CAFE purposes as if it achieved 100 mpg. An electric vehicle can be counted for CAFE purposes as if it achieved up to 350 mpg. Automakers can receive a fleetwide credit of up to 1.2 mpg for the manufacture of flexible fuel vehicles that can run on either gasoline or alternative fuels, so that to meet a 40 mpg standard they only would have to achieve a fleet fuel economy of 38.8 mpg if enough flexible fuel vehicles were manufactured to qualify automakers for credits equal to 1.2 mpg. Additionally, manufacturers who exceed CAFE standards may carry the credits earned forward or back to meet the standards for three future or prior years.

In reaching its conclusions regarding the feasible levels of fuel economy, the Committee has relied on a variety of authorities, including the following:

EPA.—Using the highest mpg cars in each weight class for model year 1988, and assuming all cars sold in that weight class achieved that mpg, the fleet average for 1988 could have been 33.9 mpg. This means that using the most fuel efficient 1988 technology, with no change in the size mix of the fleet, the 1988 fleet would average 33.9 mpg.[37]

For the 1990 fleet, with this same analysis, using the best mileage vehicles in each size class with no change in the size mix of the fleet, the fleet average would be 34.4 mpg. This is the same level that would be required in 1996 by S. 279.

The same analysis for the 1990 light truck fleet shows that, using the most fuel efficient vehicle in each size class for the light truck fleet, the 1990 fleet could have achieved 25.9 mpg with no change in size mix.[38] This is above the standard that S. 279 would require for light trucks in 1996.

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[37] EPA, Office of Mobile Sources, Office of Air and Radiation, "Light Duty Automotive Technology and Fuel Economy Trends Through 1989," EPA Technical Report No. EPA/AA/CTAB 98–04 (May 1989).

[38] EPA "Best in Weight Class" Analysis, Draft prepared for use at Society of Automotive Engineers 1991 meeting (Feb. 14, 1991) at 1. The document is available in Consumer Subcommittee files.

Additionally, between 1988 and 1990, the horsepower of the fleet has increased 10 percent, and the size of the fleet has increased 6 percent, while the fleet fuel economy decreased by 4 percent. The average top speed of the 1990 fleet was 118 miles per hour (mph), up from 106 mph in 1980. The average time in which the 1990 fleet could accelerate from 0–60 mph was 12.1 seconds. For each 1.35 mph the top speed of the fleet is reduced, the fuel economy can be improved by 1 mpg. For each 0.29 seconds the acceleration time is reduced, the fleet fuel economy can be increased by 1 mpg.[39]

Oak Ridge National Laboratory, operated for DOE ("Energy Efficiency: How Far Can We Go?", January 1990).—Using current technology, with no change in size or performance, the domestically manufactured fleet could be at 38.5 mpg by 2000. Achievement of these levels would be cost-effective.

Report for Lawrence Berkeley Lab, Berkeley, California, under contract to EPA ("Supply Curves of Conserved Energy for Automobiles," Marc Ross, University of Michigan, and Marc Ledbetter, the American Council for an Energy Efficient Economy, March 1990).—Fleet fuel economy of 40.1 mpg is feasible and more than cost-effective by 2000 with vehicle size and performance the same as that available in the 1987 fleet.

Draft Report by EPA Contractor, (Energy and Environmental Analysis, Inc.) (EPA Contract No. 68-02-4601), ("An Assessment of Potential Passenger Car Fuel Economy Objectives for 2010," June 1990).—Fleet fuel economy of 45 mpg by 2010 is achievable if size and performance are held constant, with technology that does not require any development breakthrough. Fleet fuel economy of 38.0 mpg by 2001 for the entire fleet is feasible if size and performance of vehicles are the same as those in the 1987 fleet, and with maximum use of already existing technology.

Office of Technology Assessment (OTA).—Most recently, OTA has testified that a 38.4 mpg fleet fuel economy by 2001 can be achieved by a return to size and performance levels of the 1987 fleet, introduction of technologies that could pay for themselves in ten years with gasoline valued at $1.55–$1.90 per gallon, and an abandonment of product lines before their normal replacement times. OTA notes that this could cause significant economic disruption to the industry similar to that in the early 1980s. However, OTA points out that the 40 mpg standard set by S. 279 is not truly comparable to a 40 mpg fleet fuel economy, due to the credits available to manufacturers in current law. Thus, manufacturers "may be able to achieve a 40 mpg 'standard' without actually attaining a true 40 mpg fleet average fuel economy."[40] OTA's testimony also noted that its method of analysis is arguably conservative, because it "incorporates only technologies that have already been commercialized. * * * [O]ther technologies that could be commercialized by 2001 are not included in our analysis."[41]

OTA further stated that "the 10-year interval between now and 2001 offers some potential for new technologies * * * to begin to

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[39] Id. at 4.

[40] Testimony of Steven E. Plotkin, Senior Associate, OTA, before the Senate Energy and Natural Resources Committee, Mar. 20, 1991 at 10.

[41] Id. at 5.

impact fleet fuel economy by 2001. It appears feasible, although by no means certain, that a 40 mpg standard could be met by 2001 with some combination of new technology, wider use of existing technologies, limits on vehicle performance, and weight reduction that does not compromise safety." [42]

OTA testified before the Consumer Subcommittee in 1989 that a fleet average of 32–33 mpg was possible by 1995 without change in the size mix of the fleet or loss of performance, and at a cost compensated for by fuel savings, but only if industry began immediately to input available technology into its product plans. At the high end of this estimate, size and performance would have to be held at 1987 levels.[43] A 1982 OTA study projected fuel economy by 1995 of 39–54 mpg, and by 2000 of 43–62 mpg, with no shift to smaller cars.[44]

DOE.—The Department has stated that, using conventional technologies, the fleet fuel economy can be raised to between 35 mpg and 40 mpg during the 1995 to 2000 period.[45] DOE further has stated that the domestic fleet, with maximum use of technology currently in production and holding vehicle size mix and performance levels at 1987 levels could achieve 32 mpg to 33 mpg for 1995 and 39 mpg for 2001. [The potential for the entire fleet would be higher, since the domestic fleet's current achievement is slightly lower than the fleet as a whole].[46] DOE cautions, however, that it "does not believe it is practical to return to [1987] levels of performance and size by 1995. To do so would greatly disrupt current product plans and lessen manufacturers' ability to apply available fuel economy technology and, at the same time, achieve emissions, safety, and possible alternative fuels goals." For 2001, DOE states that "substantial greater opportunity exists to improve fuel economy through technology and revised product plans. . . . While this level of fuel economy [39 mpg] is technically achievable and sufficient time exists to make product plan changes, it still presents a high level of risk to the vehicle manufacturers."

Automobile Industry Suppliers.—Testimony received by the Consumer Subcommittee based on a survey of suppliers to the auto industry, including suppliers of all major vehicle components, stated that the suppliers surveyed believed that higher levels of fuel economy can be achieved. The average recommendation of the suppliers surveyed for CAFE levels in the future was 33 mpg by 1995 and 41 mpg by 2000.[47] However, Goodyear Tire and Rubber Company, a supplier of tires to the auto industry, opposes more stringent fuel economy standards, stating that the tire industry has been pushed to it technological limit, and that further improvements in tire roll-

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[42] Response of Steven Plotkin, OTA, to additional questions of Senate Committee on Energy and Natural Resources, letter dated Mar. 12, 1991, Question 2.

[43] Testimony of Steve Plotkin, Senior Associate, Energy and Materials Program, Office of Technology Assessment, S. Hrg. 101-129 at 57.

[44] Office of Technology Assessment, "Increased Automobile Fuel Efficiency and Synthetic Fuels, Alternatives For Reducing Oil Imports," (1982) at 122-126.

[45] Letter from Donna Fitzpatrick, Acting Secretary of Energy, to Congressman Dingell, dated February 14, 1989.

[46] Stuntz Letter, supra., at Answer to Question 6.

[47] Testimony of Earl Landesman, Principal, A.T. Kearney, S. Hrg. 101-347 at 229.

ing resistance will be modest and far more costly than earlier gains.[48]

Carmen Difiglio (DOE), K.G. Duleep (Energy and Environmental Analysis, Inc.), and David Green (Oak Ridge National Laboratory) "Energy Journal," Vol. II, No. 1 1990, "Cost Effectiveness of Future Fuel Economy Improvements."—For domestically produced vehicles, fleet can be at 31.6 mpg by 1995 by holding size and performance to 1987 levels, at a cost offset by fuel savings over four years. This corresponds to the OTA 1995 figure of 32–33 mpg for the entire fleet. For 2001, holding size and performance at 1987 levels, the domestic fleet can achieve a level of 36.1 mpg at a cost offset by fuel savings over ten years, or 39.4 mpg at a cost of $264 above that offset by fuel savings. [The potential of the entire fleet would be higher, since the domestic fleet has the lowest average at present.]

International Institute for Energy Conservation.—Technology currently exists to achieve fuel economy levels considerably above the levels set by this bill. However, most of the research on additional fuel economy technology is occurring overseas, because domestic automakers are not convinced that there is a long-term interest, by government or consumers, in improved fuel economy. If this research trend is not reversed through government regulation or otherwise, domestic automakers could suffer a competitive disadvantage over the long term.[49]

The automobile industry, and particularly the domestic industry, testified that the levels set by the reported bill cannot be achieved without considerable downsizing of the fleet.[50] However, this testimony was virtually identical to that of the industry in 1974–1975 prior to the passage of current law,[51] which was proven dramatically inaccurate. The Committee is not convinced that the industry's ability to predict its capability the next decade has improved significantly, particularly in light of considerable data to the contrary.

The Committee recognizes that the industry could choose to meet increased CAFE standards by selling only the smallest cars in its fleet, rather than by increasing its utilization of fuel economy technology across a range of sizes in its fleet. However, manufacturers obtain considerably higher profit margins on the sale of larger, more expensive vehicles than on "economy" models.[52] Therefore, given the industry's past ability to rise to technological challenges, as well as the economic incentives available to continue to sell a range of sizes of vehicles, the Committee does not believe that it is

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[48] Statement of the Goodyear Tire and Rubber Company, submitted to the Senate Consumer Subcommittee for the record of the hearing on S. 279, S. Hrg. 102-19 at 164.

[49] Testimony of Deborah Bleviss, Executive Director, International Institute for Energy Conservation, S. Hrg. 101-129 at 200-217.

[50] See, e.g., Testimony of George Eads, Vice President, General Motors Corp., S. Hrg. 102-19 at 65; testimony of James Olson, Vice President, Toyota Motor Sales, U.S.A. S. Hrg. 102-19 at 69; testimony of Ronald Boltz, Vice President, Chrysler Corporation, S. Hrg. 102-19 at 72. See also, testimony of Hal Bracken, Group Vice President, Toyota Motor Sales, U.S.A. S. Hrg. 101-347 at 147; testimony of Toni Harrington, Manager, Government and Industry Relations, Honda North America, Inc., S. Hrg. 101-347 at 194-198; testimony of Jerry L. Benefield, President and CEO, Nissan Motor Manufacturing Corp., S. Hrg. 101-347 at 217-18.

[51] See e.g., Statement of GM, Ford and Chrysler at Hearing on S. 1903, Energy Conservation working Paper, S. Hrg. 93-41 at 141, 177 and 195.

[52] Plotkin testimony, supra., S. Hrg. 101-129 at 34.

logical to conclude that the industry will respond in a way inconsistent with consumer demand.

The Committee also is aware that the administration has communicated its opposition to the reported bill and its belief that the CAFE levels are not technically feasible without significant downsizing. However, the Committee was not persuaded by that communication, for several reasons.

First, DOT's judgement regarding technical feasibility cites no data or research to support its view. Additionally, in a letter to the Consumer Subcommittee dated February 2, 1990, DOT stated that it did not have the information necessary to determine the fuel economy achievable with a return to 1987 size and performance and using available technology.[53] The letter regarding technical feasibility was sent approximately two months later, with no indication of how it had obtained the information on which its opinion was based.[54]

Further, DOE's technical judgement as provided to the Committee and set forth previously, indicates considerably more optimism about the levels of fuel economy that are possible than does its opposition to the bill, which cites no additional or contrary data. In this regard, in December 1990, DOT commissioned NAS study on the feasibility of increasing fuel economy standards. The first installment of the NAS report is not expected to be completed before June 30, 1991.

SAFETY ISSUES

Each year about 45,000 Americans die in highway crashes and another 520,000 Americans are hospitalized with serious injuries. According to DOT, highway crashes cost the U.S. economy $75 billion annually. Highway crashes are the leading cause of death for Americans between the ages of 1 and 34. Highway safty is, of course, a high priority of the Committee.

Some have raised concerns about the effect of increased CAFE standards on vehicle safety, should increased standards result in a significantly smaller vehicle fleet. There has been some debate over whether S. 279's fuel economy goals could be achieved without downsizing of the vehicle fleet, and considerable evidence has been received that such downsizing will not be necessary.

The Committee intends to insure that the safety of the driving public is protected. The Committee does not believe that S. 279 as reported, will compromise highway safety. First, as stated, the standards set by S. 279 have been established at levels that are intended to require no significant change in the range of vehicle sizes available to consumers. The history of compliance with current CAFE law demonstrates that fuel economy improvements do not depend on downsizing, nor do they erode the safety of the fleet. While some of the fuel economy improvements achieved between 1975 and the present were due to weight or size reduction, between 1980 and 1988 the average vehicle weight remained almost con-

[53] Letter from Phillip D. Brady, General Counsel, Department of Transportation to Senator Bryan, dated Feb. 2, 1990, at Answer to Question 6.

[54] Letter from Samuel Skinner, Secretary of Transportation, to Senator Ernest Hollings, Chairman, Committee on Commerce, Science and Transportation, dated Mar. 30, 1990.

stant, while the fuel economy increased by over 20 percent.[55] Moreover, increased market share for smaller cars explains only a small percentage of the fuel economy improvement since 1977. The interior volume of cars in the fleet has remained almost constant since 1978, at the same time that fuel economy improved dramatically.[56] Most importantly, while the fuel economy of the fleet doubled between 1975 and the present, the highway fatality rate per registered vehicle has declined significantly, from 5.66 per 100,000 vehicles in 1975 to 4.43 per 100,000 vehicles in 1987.[57] In 1990, the highway fatality rate was 2.2 per 100 million vehicle miles travelled, the lowest such rate in history.[58]

Nervertheless, in light of the concerns that have been raised, the Committee has examined carefully the available data on the relationship of vehicle size and safety. The available opinion is quite divided on the subject. For example, the Center for Auto Safety, Public Citizen, Consumers Union, U.S. Public Interest Research Group, and Ralph Nader all have supported S. 279 and have expressed the belief that it will not have any adverse effect on safety. On the other hand, the National Highway Traffic Safety Administration (NHTSA) within DOT, the Insurance Institute for Highway Safety (IIHS), and the auto industry all have expressed various concerns that S. 279 will adversely affect safety.

The scientific analysis of this issue is inconclusive. However, it demonstrates, at a minimum, that the safety of a vehicle is affected significantly by its design, unrelated to its size. This is demonstrated by crash test results and fatality rates for cars of various size classes. Many smaller cars do better in crash tests and have lower fatality rates than larger cars. For example, crash testing performed in NHTSA's 1989 New Car Assessment Program found that some subcompact cars, such as the 3,320 pound Dodge Daytona, tested with less injury to occupants than larger vehicles such as the 4,340 pound Chrysler Fifth Avenue or the 4,630 pound Chevrolet Astro Van.[59] Additionally, according to the IIHS, of the 14 1984-88 model year vehicles with the lowest death rates, seven are midsized cars, five are large cars, and two are small cars.[60] Nine of the 13 cars with the highest death rates are small. The other four cars are midsized.

As OTA has testified, "moderate reductions in average size and weight could be accommodated without a loss in overall fleet safety, because there are compensating measures available (antilock brakes, passenger side airbags, etc.)" [61] Thus, the Committee

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[55] Testimony of Mark Ledbetter and John DeCicco, American Counsil for an Energy Efficient Economy, S. Hrg. 102-19 at 131.

[56] Id.

[57] Partyka and Boehly, National Highway Traffic Safety Administration, "Passenger Car Weight and Injury Severity in Single Vehicle Nonrollover Crashes" (June 1989), at 21.

[58] National Highway Traffic Safety Adminstration data.

[59] NHTSA, New Car Assessment Program results, NHTSA 16-89 (June 1989). See also, testimony received by the Committee after consideration of S. 279 from the General Accounting Office, stating that when car weight and fatality rates are compared, mid-sized cars have higher fatality rates than either small or large cars. Testimony of Eleanor Chelimsky, Assistant Comptroller General, before the Senate Consumer Subcommittee Hearings on NHTSA Reauthorization, Apr. 11, 1991, Statement at 1-2.

[60] Insurance Institute for Highway Safety, "Status Report," Vol. 26, No. 4 (Apr. 13, 1991) at 1-5.

[61] Response of Steven Plotkin, Senior Associate, Office of Technology Assessment, to additional questions of Senate Energy Committee, Mar. 12, 1991, at Question 2.

believes that the proper approach is to require that vehicles be both fuel efficient and safe and that technology exists to achieve both goals.

A brief discussion of the recent data on this issue is set out below. There appears to be agreement among the experts on at least one issue: the increased performance, including increased horsepower, decreased acceleration time, and increased top speed that has occurred throughout the fleet in recent years when CAFE standards have been relaxed, adversely affects safety.[62] For example, K.G. Duleep, a contractor for OTA, states that "* * * many of the technology improvements are being utilized today to improve performance while maintaining near constant fuel economy. If CAFE standards reduce performance, safety could actually be enhanced." [63]

Similarly, the IIHS has explained that "[b]ecause of engine improvements, newer cars achieve much more power per unit of engine displacement than older cars. But this advancement isn't being used entirely toward improving fuel economy. A large part of its is being used toward improving cars' acceleration and, in some cases, toward increasing top speeds. Reversing this trend and applying engine efficiency improvements to fuel economy not only would increase the miles-per-gallon average of new cars but also would enhance safety by holding down speed." [64]

Additionally, most experts believe that removing weight from a car without affecting its size (through use of lighter, stronger materials, for example) is of minimal safety concern.[65] As a consultant to OTA has stated, "it is obvious that increasing the weight of a car by loading a sack of bricks on the rear seat will not make a car safer. Safety also depends on the materials used, the design of the impact energy absorbing structure and the total length of the car."[66]

Testimony received by the Committee subsequent to its consideration of S. 279 reinforces this point. The General Accounting Office (GAO) testified that "* * * it is not true that cars become more dangerous simply by getting lighter. The highest fatality rates occur in cars in the middle of the weight spectrum, particularly in single-car crashes." [67] GAO further testified that the "* * * heavi-

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[62] According to EPA, between 1988 and 1990, the horsepower of the fleet increased by 10 percent. EPA Technical Report No. EPA/AA/CTAB/90-01, "Downward Trend in Passenger Car Fuel Economy—a View of Recent Data," (January 1990) at 1. For 1990 model cars, the average top speed of the fleet is 118 mph, and the average time it takes to accelerate from 0 to 60 mph is 12.1 seconds. This is up from an average top speed of 112 mph in 1975 and 106 mph in 1980. *See*, EPA "Best in Weight Class" Analysis, Draft analysis for 1991 Society of Automotive Engineers presentation (Feb. 14, 1991). The document is available in consumer Subcommittee files.

[63] Letter from K.G. Duleep, Director of Engineering, Energy and Environmental Analysis, to the Senate Commerce Committee dated Sept. 5, 1990, at 3. The letter is available in Consumer Subcommittee files.

[64] IIHS, "Status Report," Vol. 25, No. 8 (Sept. 8, 1990) at 11.

[65] See, e.g., Insurance Institute of Highway Safety, Status Report, "Where Is Safety in the Fuel Economy Debate?," Vol. 25, No. 8 (September 8, 1990) at 3: Robertson, Leon, "How to Save Fuel and Reduce Injuries in Automobiles," The Journal of Trauma, Vol. 31, No. 1 (January 1991) at 107; Testimony of K.G. Duleep, Director, Energy and Environmental Analysis, before the Senate Energy and Natural Resources Committee, Mar. 20, 1991 at 3.

[66] Testimony of K.G. Duleep, Director, Energy and Environmental Analysis, accompanying Steven E. Plotkin, Senior Associate, Office of Technology Assessment, before the Senate Energy and Natural Resources Committee, Mar. 20, 1991 at 3.

[67] Testimony of Eleanor Chelimsky, Assistant Comptroller General, supra. at Statement p. 1.

est cars create the greater fatality risk to others [than their own occupants]," so that " * * * because of the impact risk created by heavier cars and the poor safety of middle size cars, we believe that if the percentage of small cars on the road would increase, the overall fatality rate might decrease" [68] Similarly, the IIHS testified that " * * * if vehicles maintain their wheelbase and width, but become lighter, there would be no safety trade off." [69]

NHTSA's concern about the impact of S. 279 on safety apparently is based on two studies of death and injury rates for various size or weight vehicles in single vehicle crashes.[70] The types of crashes studied by NHTSA account for about one-half of all passenger car occupant fatalities that occur each year.[71]

The studies conclude that, in single vehicle nonrollover crashes, there is no statistical relationship between vehicle size and increased fatalities, but there is some increase in injuries in such accidents based on vehicle size.[72] However, the study cautions that its analysis "does not allow any quantitative conclusions about the safety effect [of size] across the entire spectrum of crashes." [73] Further, the study notes that, for the ten years studied, fatalities per vehicle have declined, and "they have declined within each car weight class. This suggests that occupants of cars of all weights are benefiting from other improvements . . . and that these improvements are large enough to compensate for an increase in injuries resulting from the shift to lighter cars." [74]

For single vehicle rollover crashes, the study finds that "narrower, lighter, shorter cars have higher rollover rates than wide, heavy, long ones under the same crash conditions. . . . The methods of this report do not identify which individual vehicle size parameter (track width, curb weight, wheelbase, etc.) is the principal 'cause' of rollover proneness." [75] The author of this study cautions that it would be "inadvisable" to use the study's methods "to predict what might happen in the future if a single parameter (for example, curb weight) is changed while others are held constant." [76]

The IIHS also expresses serious concern that downsizing of vehicles will reduce safety, basing its opinion primarily on work it has done on cars of different wheelbase length.[77] It compares certain General Motors (GM) vehicles of different years, both before and after wheelbase reductions, and also compares GM cars of the same model year that were and were not downsized. It concludes that

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[68] Chelmisky testimony, supra., Transcript at 96.

[69] Testimony of Brian O'Neill, President, Insurance Institute for Highway Safety, at Senate Consumer Subcommittee Hearing on NHTSA Reauthorization, Apr. 11, 1991, Transcript at 103, 112.

[70] U.S. Department of Transportation, "Effect of Car Size on Fatality and Injury Risk," (August 1990), combining 2 studies: Partyka and Boehly, NHTSA, "Passenger Care Weight and Injury Severity in Single Vehicle Nonrollover Crashes," presented at the Twelfth International Technical Conference on Experimental Safety Vehicles (June 1989); and Kahane, NHTSA, "Effect of Car Size on the Frequency and Severity of Rollover Crashes," (May 1990.

[71] Id. at 15, 29.

[72] Id. at 15.

[73] Id.

[74] Id. at 15.

[75] Id. at 29.

[76] Id. See also, testimony of Eleanor Chelimsky, GAO, at Senate Consumer Subcommittee Hearing, April 11, 1991, Transcript at 95 and Statement at 9–10, confirming this limitation and disputing NHTSA's estimate of increased fatalities.

[77] Insurance Institute for Highway Safety, "Status Report," Vol. 25, No. 8, supra.

the fatality rates increased after size reduction in these vehicles. However, testimony received by the Committee pointed out that there are many variables other than size that could affect some of these results, but that those variables were not considered. For example, "once the data * * * are adjusted for the fact that older cars are driven fewer miles, and therefore are less exposed to accidents, the results change dramatically. * * * [S]even of the eleven cars [considered by the IIHS] had lower death rates after they were downsized." [78] The IIHS agrees that other variables are relevant, including miles driven and age and sex of the driver, but suggests that there is no way to control for the number of miles drive.[79] However, the IIHS states that comparison of fatality rates for vehicles that are and are not downsized in the same years eliminates such variables and demonstrates that downsizing adversely affects safety.[80]

In testimony received by the Committee subsequent to its consideration of S. 279, the IIHS reiterated that there are many factors other than size that influence occupant death rates.[81] Additionally, other testimony was received by the Committee at that time from Professor Daniel Khazzoom, Professor of Quantitative Studies at San Jose State University, to the effect that the statistical model on which the IIHS had based its conclusions is not credible. Professor Khazzoom testified that this is because the model "* * * failed to explain 79% of the variations, which means that the parameters that they estimated are very far from the truth." [82] IIHS responded to Dr. Khazzoom by stating: "The fact that 79 percent of the variation of fatality rates was not accounted for means only that there are other factors that also affect fatality rates. It does not mean that the estimated relationship between death rates and fuel economy is invalid. What the remaining variability means is that one cannot predict precisely the occupant fatality rates of individual cars by knowing only their fuel economy ratings * * * The Institute's analysis was not intended to prove that improved fuel economy directly causes higher fatality rates. Rather, as discussed at the hearing, fuel economy is indirectly linked to occupant safety by its effect on the exterior size of cars." [83]

Although the statistical analysis of this issue is a complex one, the Committee has received consistent testimony that a wide range of safety technologies is available that will enhance the safety of all cars, including small cars. These safety technologies include improved side impact protection and airbags for all front seat occupants.[84]

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[78] Testimony of Mark Ledbetter and John Decicco, Senate Consumer Subcommittee Hearing, S. Hrg. 102-9 at 132.

[79] See, Insurance Institute for Highway Safety, "Status Report," Vol. 24, No. 11 (November 1989) at 1; Statement of Brian O'Neill, Feb. 22, 1991, submitted for the record of S. Hrg. 102-9 at 165.

[80] Id.

[81] Testimony of Brian O'Neill, President, Insurance Institute for Highway Safety, at Senate Consumer Subcommittee Hearing on NHTSA Reauthorization, Apr. 11, 1991, transcript at 113.

[82] Testimony of Professor Daniel Khazzoom, Professor of Quantitative Studies, San Jose State University, at Senate Consumer Subcommittee hearing on NHTSA Reauthorization, April 11, 1991, Transcript at 116, 117-18.

[83] Letter from Brian O'Neill, President, IIHS to Senator Bryan, dated Apr. 19, 1991, at 1-2.

[84] Testimony of Clarence Ditlow, Executive Director, Center for Auto Safety, S. Hrg. 101-129 at 268-9.

DOT has estimated that the general availability of airbags in passenger cars could prevent over 8,000 fatalities annually. About 3.3 million 1990 model cars will have driver-side airbags and several models also will have passenger-side airbags.[85] Continued improvement in the availability of such safety devices in all vehicles can more than compensate for any adverse impact of size reduction that is predicted by even the most pessimistic data on the issue. The Committee believes, therefore, that safety need not be sacrificed to achieve fuel economy, and that fuel economy need not be sacrificed to achieve safety.

STRUCTURE OF THE CAFE STANDARDS

This bill would retain the current structure of the CAFE law with one exception. In place of the current numerical standard that must be met by all manufacturers, the bill requires each manufacturer to improve by the same percentage, so that each manufacturer's numerical level would be different. The Committee intends that all other aspects of the current CAFE structure be retained, including the favorable treatment providing credits toward meeting CAFE standards based on the manufacture of alternative fuel vehicles established by Alternative Motor Fuels Act of 1988 (Public Law 100-4949).

The change in the current structure of the CAFE law made by the bill is for the purpose of insuring, to the extent possible, that the standards correct an unfairness in the current system and actually save fuel. Under current law, since small car manufacturers easily meet the numerical standard, they can build less fuel-efficient cars and market them, so that more such cars are sold and no fuel is saved. By requiring every manufacturer to do better, it is less likely that any manufacturer can provide the market with less fuel-efficient vehicles in large numbers.[86]

This approach also corrects the inequity in current law created by requiring all manufacturers, regardless of the size cars they build, to meet the same CAFE level. Manufacturers of small cars are not challenged by the current standards, while manufacturers who make a full range of sizes have difficulty meeting the current standards. The new approach would require equal improvement from all manufacturers.[87]

The percentage approach would require achievement of an average 1.7 mpg greater improvement by the major Japanese manufacturers as compared to the major U.S. manufacturers. By contrast, a requirement of a 40 mpg numerical standard across the fleet would require U.S. manufacturers to improve an average of 4 mpg more than the major Japanese manufacturers.[88] While no approach can be perfectly identical in impact among manufacturers due to the market niches selected by each manufacturer, the percentage approach minimizes the differences among small and large car manufacturers.

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[85] IIHS, "Status Report," Vol. 24, No. 10, Oct. 21, 1989, at 6-7.
[86] Bleviss testimony, supra., S. Hrg. 101-347 at 128-9.
[87] Testimony of Robert G. Liberatore, Executive Director, Public Policy and Legislative Affairs, Chrysler Corp., S. Hrg. 101-129 at 164-5.
[88] This figure is calculated from NHTSA data.

Additionally, the bill as reported contains a "cap" or maximum level of fuel economy required, to avoid unduly burdening manufacturers which achieved high levels of fuel economy by 1988. Five of the ten Pacific Rim manufacturers will take advantage of these caps in either 1995 or 2001.[89]

According to EPA, in recent years the gap between imported and domestic manufacturers' fuel economy has been closing, from an 8 mpg difference in 1983 to a 3 mpg difference in 1990. Between 1988 and 1990, the fuel economy of Pacific Rim manufacturers eroded more than twice as fast as the domestic manufacturers, with the domestic manufacturers' fuel economy declining by 3 percent, and the Pacific Rim manufacturers' fuel economy declining by 6 percent. The horsepower of the Pacific Rim fleet increased by 22 percent, as compared to a 5 percent increase in that of the domestic fleet.[90]

Some foreign manufacturers, particularly Japanese companies, testified in opposition to the percentage structure, claiming that it is unfair because it requires the highest CAFE levels of those manufacturers which already have achieved the best fuel economy. They also argue that it prevents those manufacturers with current fleets of primarily small cars from entering the larger or luxury car market, thereby unfairly protecting the domestic manufacturers' current dominance of the larger car market. Indeed, Honda, Toyota, and Nissan all have recently introduced luxury models to compete with the European luxury vehicles like the MBW.

Certain companies recommended, instead, separate CAFE standards for each size or weight class of vehicle to require the same level of improvement in each class.[91] They suggest that this would remedy current unfair treatment of large car manufacturers, since all vehicles would have to improve. They further suggest that this approach avoids burdening manufacturers that have achieved high levels of fuel economy and rewarding those that have not done well. It also allows sales of whatever size mix of vehicles the market demands. Since each size class would have separate standards, if consumers wanted increased numbers of large vehicles, those could be sold as long as the vehicles in the larger classes achieved the required improvements in fuel economy.

However, the separate size or weight class standards peresently available do not, standing alone, prohibit increases in the size and weight of the fleet as a whole, and so do not ensure that fuel savings actually will result from such standards.[92] For this reason, the percentage approach is believed to be the only legislative mechanism available at this time that assures achievement of the environmental and energy security goals of this legislation. In addition, size or weight class standards are not appropriate for use with vehicles in the "light truck" fleet, such as minivans, jeeps, and small pickups. This is because the interior volume or size of those vehicles is not necessarily related to performance or fuel economy requirements. Since these vehicles represent one-third of the new car

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[89] Calculated from NHTSA, "Summary of Fuel Economy Performance on a Year-to-Year Basis" supra., Model Year 1998.

[90] Murrell and Heavenrich, supra., EPA Report No. EPA/AA/CTAB/90.01.

[91] See, e.g., testimony of Nissan North American, Inc., S. Hrg. 102-19 at 75.

[92] Bleviss testimony, supra., S. Hrg. 101-347 at 128-9.

fleet, it would be inappropriate to structure CAFE standards in a way that could not be used for such a large portion of the fleet.

The bill as reported, however, does include a provision for two studies of options for fuel economy standards in the period after 2001. Such studies are intended to provide the Congress with information about the technological levels and structure of standards that would be most appropriate for that future period.

FUEL AND CARBON DIOXIDE SAVED BY S. 279

The American Council for an Energy Efficient Economy (ACEEE) calculates that S. 279 will save 2.5 million barrels of oil per day by the year 2005, and 3.2 million barrels of oil per day by 2010. ACEEE calculates that, by 2005, the bill will reduce carbon dioxide emissions by 440 million tons per year.

Legislative History

Senator Bryan, chairman of the Consumer Subcommittee, introduced S. 279 on January 29, 1991. The bill is cosponsored by 34 Senators, including Senators Gorton, Hollings, Bentsen, Gore, Kerry, McCain, and Robb on the Committee.

On February 21, 1991, the Consumer Subcommittee held a hearing on S. 279. In addition, the Consumer Subcommittee held two days of hearings on the issue of fuel economy in the 101st Congress: S. Hrg. 101-129, on global warming and CAFE standards, held on May 2, 1989; and S. Hrg. 101-347, on S. 1224, held on September 7, 1989.

On March 19, 1991, the Committee, by a rollcall vote of 14-5, ordered S. 279 reported with two amendments. The first amendment was purely technical, correcting printing errors and clarifying the drafting of certain provisions, but making no substantive change. The second amendment, offered by Senator Stevens, added three factors that the Secretary is to consider when determining whether to exercise the Secretary's discretion to reduce or increase the standards: the ability of vehicles to perform their primary uses; the ability of vehicles to meet adequately other Federal standards, such as safety and emissions; and the reduction of oil consumption and carbon dioxide emissions due to the use of car pools in urban areas.

Summary of Major Provisions

As reported, S. 279 would provide for the following:

1. It would increase the CAFE standards for passenger cars and light trucks over 1988 levels by 20 percent in 1996 and 40 percent in 2001. The required levels for each manufacturer would be subject to minimum and maximum levels as follows: for cars, a minimum of 27.5 mpg and a maximum of 40 mpg in 1996, and a minimum of 33 mpg in 1995 and a maximum of 45 mpg in 2001; for light trucks, a minimum of 20 mpg and a maximum of 30 mpg in 1996, and a minimum of 24 mpg and a maximum of 35 mpg in 2001.

2. It would permit the Secretary of Transportation to modify the statutory standards to the "maximum feasible" level of fuel economy, but not below a standard requiring a 15 percent increase over 1988 levels of fuel economy in 1996 and a 30 percent increase over

1988 levels in 2001. If the Secretary finds it appropriate to reduce the standards to the full extend of the Secretary's discretion, the average fleetwide standards would be as follows: passenger automobiles—33 mpg for 1966 and 37.3 mpg for 2001; and light trucks—24.5 mpg for 1996 and 27.7 mpg for 2001.

3. It would increase, by the inflationary adjustment indicated by increases in the Consumer Price Index, the civil penalties assessable against manufacturers which fail to meet the CAFE standards, beginning in model year 1992. Additionally, the bill would double the civil penalties for any manufacturer that violates the standards for more than two consecutive years by more than .5 mpg.

4. It would require three studies and reports to Congress on: (1) the accuracy of current EPA tests of vehicle fuel economy; (2) the technological potential for improving the fuel economy of the passenger fleet in the next century; and (3) policy options for fuel economy standards beyond the year 2001.

Estimated Costs

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office:

U.S. Congress,
Congressional Budget Office,
Washington, DC, March 29, 1991.

Hon. Ernest F. Hollings,
Chairman, Committee on Commerce, Science and Transportation, U.S. Senate, Washington, DC.

Dear Mr. Chairman: The Congressional Budget Office has reviewed S. 279, the Motor Vehicle Fuel Efficiency Act as ordered reported by the Senate Committee on Commerce, Science, and Transportation, March 19, 1991. CBO expects that enactment of this bill would result in additional costs to the federal government of about $1 million in each of the fiscal years 1992 and 1993 and about $500,000 per year thereafter. Such costs would come from appropriated funds. The bill would not affect direct spending or receipts, and therefore would not affect pay-as-you-go scoring. We do not expect the bill to result in significant costs to state or local governments.

S. 279 would establish new corporate average fuel economy (CAFE) standards beginning with model year 1996. These new standards would be based on the average fuel economy achieved by each manufacturer of passenger automobiles in model year 1988. Manufacturers would be required to maintain an average 20 percent above their 1988 level in model years 1996 through 2001, and 40 percent above their 1988 level after 2001. The bill would establish similar standards for light trucks, and would allow the Secretary of Transportation to modify the standards for cars or light trucks under certain circumstances.

This bill would require several studies by the Secretaries of Transportation and Energy, and by the Administrator of the Envi-

ronmental Protection Agency. In addition, the Department of Energy would be required to distribute at least 100 booklets containing fuel economy information to each automobile dealer. Currently, the department distributes 50 of these booklets to each dealer.

CBO estimates that the cost of the studies required by S. 279 would be about $1.5 million, mostly in 1992 and 1993. The cost of distributing additional booklets would be about $400,000 per year. Enactment of this legislation could also result in the collection of additional fines after model year 1996 as a result of higher CAFE standards, but CBO is unable to predict which or how many manufacturers would be unable to achieve these new standards.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contacts are Marjorie Miller and Kim Cawley, who can be reached at 226-2860.

Sincerely,

ROBERT D. REISCHAUER,
Director.

REGULATORY IMPACT STATEMENT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported.

NUMBER OF PERSONS COVERED

This legislation increases the stringency of CAFE regulations currently in existence. As it does not change the definitions of those covered by current regulation, the number of persons covered should be consistent with current levels.

ECONOMIC IMPACT

The reported bill does not increase the duties required of the agencies charged with implementing current regulation. It requires three additional studies to be carried out through agency-appropriated funds, and does not authorize additional appropriations. Thus it is not expected to require significant increases in government expenditures.

It is expected that affected vehicle manufacturers will incur some additional cost in producing vehicles capable of achieving higher fuel economy standards. This cost has been estimated to be less than $300 per car over the amount saved by the consumer in gasoline costs, and it is, therefore, not expected to have an inflationary impact on the Nation's economy.

PRIVACY

This legislation will not have any adverse impact on the personal privacy of the individuals affected.

PAPERWORK

This legislation continues a regulatory scheme now in effect, and does not add any additional requirements for the regulators. There-

fore, there should be no change in paperwork requirements associated with these programs.

SECTION-BY-SECTION ANALYSIS

SECTION 1—SHORT TITLE

This section states the short title of the legislation, the "Motor Vehicle Fuel Efficiency Act."

SECTION 2—FINDINGS

This section sets out 17 findings on which the bill is based. The primary findings are summarized as follows: (1) improved energy efficiency is necessary not only to promote energy security and improve the trade balance, but also to reduce carbon dioxide emissions which contribute to the greenhouse effect; (2) the light duty vehicle fleet is responsible for about 39 percent of U.S. oil consumption, and the transportation sector is responsible for 31 percent of U.S. carbon dioxide emissions: (3) CAFE standards have been extremely effective in the past in increasing fuel efficiency without restricting consumer choice of vehicles; (4) CAFE standards have not increased since 1985; and (5) technology exists to increase further fuel economy.

SECTION 3—AVERAGE FUEL ECONOMY STANDARDS

This section amends the current fuel economy standards for passenger cars to reflect that the current standards will remain in effect through model year 1995, and that standards set by the bill will become effective in model year 1996 and thereafter.

SECTION 4—LIGHT TRUCKS

This section amends the current requirement that the fuel economy standards for light trucks be set by the Secretary to reflect that the Secretary's standards will remain in effect through model year 1995, and that after model year 1995 the light truck standards will be in accordance with the bill.

SECTION 5—EXEMPTIONS FOR LIMITED PRODUCTION

This section makes a technical change to the current law permitting exceptions from CAFE standards for manufacturers which make fewer than 10,000 vehicles. The technical change reflects the fact that the CAPE standards from which exceptions will be granted are being increased.

SECTION 6—EMERGENCY VEHICLES

This section makes a technical change, like that made by section 5, to the current law that permits exceptions to the CAPE standards for emergency vehicles.

SECTION 7—CONSULTATION

This section makes a technical change to the section of current law that requires the Secretary to consult with the Secretary of

Energy in administering the law, to reflect that the law includes the changes made by the reported bill.

SECTION 8—NOTIFICATION

This section makes a technical change to the provision of current law that requires the Secretary to notify the Secretary of Energy before taking action to modify any standard or grant any exception. The technical change reflects the fact that the standards involved include the standards set by this bill.

SECTION 9—CREDITS

This section makes a technical change to the section of the current law that gives manufacturers credits for exceeding CAFE standards in a given model year and authorizes manufacturers to carry the credits forward or back to meet the CAFE standards for three future or prior years. The change makes these CAFE credit provisions applicable to the standards set by this bill.

SECTION 10—NEW STANDARDS

This section amends current law by adding two new sections to establish new CAFE standards for passenger automobiles and automobiles other than passenger automobiles (small pickup trucks, vans, and jeep-type vehicles) for model years 1996 and thereafter. For passenger automobiles in model years 1996 through 2000, each manufacturer must increase its 1988 fuel economy by 20 percent, except that no standard shall be less than 27.5 mpg or more than 40 mpg. For passenger automobiles in model years 2001 and after, each manufacturer must meet a standard equal to its 1988 CAFE plus 40 percent, except that no standard shall be less than 33 mpg or more than 45 mpg.

For automobiles other than passenger automobiles (small pickup trucks, vans, and jeep-type vehicles), for model years 1996 through 2000, each manufacturer must meet a standard equal to its 1988 CAFE level for these vehicles plus 20 percent, except that no standard shall be lower than 20 mpg or higher than 30 mpg. For model years 2001 and after, each manufacturer must meet a standard equal to its 1988 CAFE level plus 40 percent, but no lower than 24 mpg or higher than 35 mpg.

This section also adds a new section to current law to alter the authority of the Secretary to modify statutory standards. It permits increases or decreases of standards for 1996 and thereafter, except that the standard cannot be lower than a 15 percent increase over 1988 levels for 1996–2000, and no lower than a 30 percent increase over 1988 levels for 2001 and thereafter. Current law permits reductions or increases by the Secretary to a level that the Secretary determines is the "maximum feasible average fuel economy" for that model year. This section retains that standard for reductions or increases, but expands upon the factors to be considered by the Secretary in making such a determination to insure that economic factors receive appropriate, but not inordinate, weight; that excessive increases in fleet horsepower are not used to offset technological capability for increased fuel economy; that the primary purposes of vehicles to be covered by the standards are considered;

that the ability to meet other Federal standards is considered; and that the positive impact of car pooling is considered.

SECTION 11—FUEL ECONOMY TESTING

This section requires the Administrator of EPA to conduct a study of the testing methods used to establish the fuel economy of particular vehicles. The results of those tests are to be compared with the actual on-road performance of those vehicles, and the Administrator is to report to Congress on the results of that study.

SECTION 12—EXPLANATORY BOOKLET DISTRIBUTED BY THE SECRETARY OF ENERGY

This section amends the law's current requirement that consumer information booklets regarding fuel economy be available to auto dealers, to insure that sufficient numbers of booklets are prepared.

SECTION 13—STUDIES

This section requires the Secretary to provide for a review by NAS in consultation will all interested parties, of the state of research and development in vehicle fuel economy and the potential for future improvement. The first report of this review is to be submitted to Congress within two years of enactment, and the report shall be updated every 5 years. Such a report will provide Congress with the necessary information to act on fuel economy standards for the period beyond 2001.

This section also requires the Secretary of Energy, in consultation with the Secretary and the Administrator of EPA, to undertake a study of the future policy options for regulating the fuel efficiency of the passenger vehicle fleet after the year 2001. The study will examine alternative forms of fuel economy regulation for their effectivness, their economic impact, and their effect on the competitiveness of the U.S. economy. A report on the results of this study is to be be submitted not later than three years after enactment of the bill.

SECTION 14—JUDICIAL REVIEW

This section makes a technical change to current law to insure that current provisions for judicial review of administrative decisions will be available to the same extent with respect to administrative decisiions under the new legislation.

SECTION 15—VIOLATIONS OF AVERAGE FUEL ECONOMY STANDARDS

This section amends current law to increase the civil penalties now imposed on manufacturers which fail to meet the fuel economy standards. First, the section indexes those penalty amounts to inflation. Beginning in model year 1992, the penalty amounts assessable during the previous year will be increaesd by the inflation adjustment calculated by the Secretary on the basis of the Consumer Price Index. Additionally, those penalties will be further doubled for "repeat offenders"—those manufacturers which fail to meet the standards for more than two consecutive model years, and by .5 gallons or more. The purposes of these changes are to

retain the significance of the penalty amounts, which have not been increased since 1975, and to deter the current practice of certain manufacturers which never meet the standards, and simply pay penalties as a matter of course.

SECTION 16—DEFINITIONS

This section clarifies that the terms "passenger automobile" and "light truck," as used in sections 11 and 13 of the reported bill, will continue to have their meaning under current law.

ROLLCALL VOTES IN COMMITTEE

In accordance with paragarph 7(c) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following description of the record votes during its consideration of S. 279:

The Committee considered a technical amendment offered by Senator Bryan and an amendment offered by Senator Stevens. Both amendments were accepted, without objection. At the close of debate on S. 279, the Chairman announced a rollcall vote on the bill as amended. On a rollcall vote of 14 yeas and 5 nays as follows, the bill was ordered reported:

YEAS—14	NAYS—5
Mr. Hollings	Mr. Ford [1]
Mr. Exon	Mr. Danforth
Mr. Gore	Mr. Kasten [1]
Mr. Rockefeller	Mr. Burns [1]
Mr. Bentsen [1]	Mr. Lott [1]
Mr. Kerry [1]	
Mr. Breaux	
Mr. Bryan	
Mr. Robb	
Mr. Packwood	
Mr. Pressler	
Mr. Stevens	
Mr. McCain [1]	
Mr. Gorton	

[1] By proxy.

ADDITIONAL VIEWS OF MR. PRESSLER

Everyone agrees that we need to take drastic steps to conserve energy and protect our precious environment. I agree with the goal of improving automobile fuel efficiency as propounded in S. 279, and supported reporting this bill to the Senate floor.

However, two aspects of this bill concern me greatly. Both were addressed in committee discussions, but not completely resolved in my view. The first involves the impact of S. 279 on light farm trucks. My State of South Dakota has a large rural population. Farmers and ranchers in South Dakota use pick-up trucks every day to haul feed, pull trailers, transport farm supplies, and to perform other essential work. They depend on solid, powerful pick-ups to perform their daily tasks. I hope that we find an appropriate way to address this aspect of the issue as the bill continues through the legislative process.

The safety aspects of increasing CAFE standards also concern me. A strong case has been made that the CAFE standards of S. 279 could lead to significant vehicle downsizing, which could adversely impact passenger safety. In fact, a 1989 Insurance Institute for Highway Safety study found that small cars have a fatality rate over twice that of large cars.

We still need to find an effective way to persuade automobile manufacturers to install airbags in smaller cars to help mitigate the safety effects of downsizing. Senator Danforth articulated an intriguing approach to addressing this issue. I am hopeful we can reach an acceptable agreement on this aspect of the issue during the floor debate. Market forces may persuade many automobile manufacturers to install airbags in their automobiles to keep up with consumer demands. But we do not know whether this actually will occur. Life is too precious to bet on market trends. I applaud the purpose of Senator Danforth's initiative, and look forward to working with him to support amendments that will properly protect automobile passengers.

I am hopeful that we can address these concerns durng full Senate debate on S. 279. With that in mind, I support moving this legislation to the next stage of debate. Sound energy and environmental policy require quick but responsible action.

MINORITY VIEWS OF MESSRS. LOTT, BURNS, AND FORD

We oppose the stringency of the passenger car and light duty truck fuel economy requirements of S. 279, and the methodology used to determine the standards. As we noted last year, when a very similar bill was reported by the Committee, we are concerned about the impact this bill would have on highway safety, consumer choice, farmers, ranchers, and the automobile industry.

The sponsors of S. 279 maintain that the increases in fuel economy required by their bill will help reduce U.S. imports of foreign oil and are possible without dramatically reducing the size of current vehicles. They also consider this can be readily accomplished by employing technologies that are already "on the shelf." Unfortunately, neither of these assertions is likely to be true.

First, the two Government agencies most involved in analyzing the energy situation and the fuel economy improvements possible from greater use of technology—DOE and DOT—object strongly to the provisions in this bill. In the letter which follows dated March 18, 1991, from DOE Secretary Watkins and DOT Secretary Skinner to Chairman Hollings, the Secretaries noted that the bill's mandated fuel economy goals are based on estimates of potential manufacturer fuel economy achievement that were deemed infeasible only a year ago.

The Secretaries' letter goes on to point out the additional demands of the new automotive emissions requirements of the recent Clean Air Act Amendments make the mandated fuel economy goals of S. 279 even more objectionalble.

The letter states emphatically, "The automotive industry, collectively or separately, will be unable to achieve a 40 percent improvement in fuel economy by 2001 without substantially downsizing the cars it produces." This is in direct contrast to the promises made by the sponsors of the legislation, and should be specifically noted.

Additionally, there are no serious studies which support the claim that downsizing will not be required by this bill. To the contrary, the author of the study done for DOE (Mr. K.G. Duleep) on which the bill is based, has revised his estimates significantly and says even his new estimates should not be used to justify increases in CAFE standards.

The safety experts of the Government and elsewhere have expressed their deep concern that the Bryan bill would result in more serious injuries and fatalities in traffic accidents. Smaller cars can be made safer with restraint systems and other technology, but the laws of physics mean that, all other things being equal, a larger vehicle affords more protection. This fact has been dramatically demonstrated by the Insurance Institute for Highway Safety (IIHS) but continues to be ignored by advocates of higher CAFE requirements.

In its September 8, 1990, Status Report entitled "Where is Safety in the Fuel Economy Debate?", IIHS states that "fuel economy standards create safety problems if they force automakers to make cars smaller." The report goes to note that "because tougher fuel economy requirements (in the Bryan bill) would call for each automaker to significantly improve its fleet average fuel use, it's likely that many manufacturers would have to downsize in order to comply. This is the point at which improving fuel economy will pose a safety problem."

A DOT report, entitled "Effect of Car Size on Fatality and Injury Risk in Single-Vehicle Crashes", states that "Narrower, lighter, shorter cars have higher rollover rates than wide, heavy, long ones under the same crash conditions. The net effect of 1970–82 car size changes is an increase of approximately 1,340 additional rollover fatalities per year."

The IIHS report states that "Overall, the death rate in the smallest cars on the road is more than double the rate in the largest cars. For every 10,000 registered cars one to three years old in 1989, 3.0 deaths occured in the smallest cars on the road, compared with 1.3 in the largest cars. The death rate is at least twice as high in small cars, compared with larger cars, in both single and multiple-vehicle crashes." These facts have led both Secretaries Skinner and Watkins to refer to S. 279 as "The Highway Fatality Act of 1991."

It is important for our colleageus to note that DOT has commissioned a study by the National Academy of Sciences (NAS to determine what levels of fuel economy important might be feasible in the next decade without imposing the risks to highway safety, consumer choice and the auto industry which are threatened by S. 279. The results of this study will be available late this year, bringing strongly into question why the Senate should press ahead at this time on a bill which poses such enormous risks.

The fundamental flaw of CAFE as an energy conservation policy is that it puts the burden of reducing gasoline consumption on the automobile manufacturers rather on the consumers who actually use the fuel. However, gasoline consumption is a function of more than just fuel economy. It also involves vehicle choices, the number of vehicles on the road and the number of vehicle miles travelled.

Under the CAFE program, consumers are free to pursue a number of actions which can, and have, largely offset the decreases in fuel consumption attributable to vehicle fuel economy increases. Attempts to dramatically increase future vehicle fuel economy are likely to be frustrated to even greater degrees by these offsetting factors. Among these actions are:

Consumers can alter their purchase decisions in order to maintain the vehicle charateristics they desire. When higher CAFE standards cause full-line or large care manufacturers to downsize or compromise the drivability of their vehicles, consumers can: keep their older cars longer, purchase trucks or vans as replacements for large cars, or purchase larger vehicles from other automakers who have not been constrained by CAFE (usually manufacturers whose product lines are weighted largely towards smaller cars).

Consumers who have acquired new, more fuel economical vehicles are less concerned about the number of miles they drive—having benefitted from a much lower cost of driving (due to the current price of gasoline and the better fuel economy of their vehicles). This situation and the increase in the number of registered vehicles have resulted in significant increases in vehicle miles travelled.

Another of the serious flaws contained in S. 279 is the impact it will have on light duty trucks. When it comes to light trucks, there can be no serious debate that the bill is without any technical or policy foundation. There is absolutely no basis for predicting that average CAFE levels of 25 and 35 mpg's by 1996 and 2001 are achievable, feasible or practical for the light truck fleet without major sacrifices in performance, size and utlity. There are no systematic studies identifying unutilized or underutilized fuel economy improvements that are feasible for light trucks.

Light trucks must have the drivetrain and axle capacity to tow heavy loads and to provide adequate traction under adverse driving situations. They must have the enhanced reliability and durability to deliver the expected performance under extended severe duty cycles and difficult operating conditons. They also must satisfy performance expections for off-road use, and must have the space and power to carry much larger and heavier cargoes than passanger cars are designed to accommodate.

Faced with a barren factual record, we have many questions but no answers on how the proposed standards in S. 279 will effect these essential features of the light truck fleet. Will the standards reduce towing capacities? Will they limit performance in adverse operating conditions or reduce the durability or useful life of the vehicles? Will they reduce off-road performance or constrain cargo capacities?

Light trucks represent an increasing proportion of overall domestic light duty vehicle sales. It makes sense to take a hard, systematic look at what fuel efficiency improvements are achievable for these popular vehicles without sacrificing the utility or other features that have led consumers to buy them in ever increasing quantities. Whatever the reasons, a detailed feasibility evaluation of the light truck standards has not been conducted.

We do not want our farmers, ranchers, tradesmen, and other businessmen who rely on the cargo and towing capacity of today's trucks, vans, and sport utility vehicles to no longer be able to purchase the size vehicles necessary to perform the job required. If downsizing occurs and leaves these vehicles unable to meet the needs of farmers and businesses, these consumers may need to use trucks (not covered by the CAFE regulations) to complete their tasks. Clearly, this will not help reduce petroleum consumption in the U.S., but it will increase the cost of doing business.

We are also concerned about the methodology used to determine the standards set forth in S. 279. Under the bill, each manufacturer would have to increase its car and truck CAFE 20 percent by 1995 and 40 percent by 2001.

High mileage companies that have exceeded the current CAFE standard are penalized for doing so because under this bill they would have to meet a higher CAFE standard than companies that

did not exceed the current standard. Placing a company at a competitive disadvantage for exceeding government mandates is poor public policy. This flaw in the percentage approach was seen by the Vice President's Council on Competitiveness last year. The Council opposed Senator Bryan's bill, in part, because Chrysler's 1988 CAFE was higher than Ford's and GM's, placing Chrysler at a competitive disadvantage.

The uniform percentage increase approach is flawed in both directions. On the one hand it overly punishes those companies that have done the most in the field of energy conservation. On the other hand, if this approach is mandated in order to provide some manufacturers with a competitive edge, we are ever fearful that this edge will last only so long as gasoline is readily available, and gasoline prices remain relatively low.

The U.S. automobile industry is under tremendous pressure. The recession has drastically affected sales. Lay-offs are increasing. On top of all this, the clean air legislation passed last year will pose an enormous technical and cost challenge for the industry, imposing among other things.

Stringent, new tailpipe and evaporative emissions standards phased-in during the early to mid 1990's.

New engines designed for new gasoline formulas (reformulated gasoline).

Development of vehicles that can operate an alcohol fuels (methanol and ethanol) and on compressed natural gas (CNG).

New systems to control refueling and other evaporative emissions.

A probable second tier of even tougher tailpipe standards in the 2000 time frame at levels not achievable with known engine and catalyst technology.

The phase out of chlorofluorocarbon refrigerants before the end of the century.

A second major "piling on" of regulation is proceeding in the area of vehicle safety. For passenger cars:

As airbags are used to meet the federal occupant protection standard some 20–50 pounds of weight will be added to the vehicle, making it more difficult to improve fuel economy.

New side impact structures will be mandated starting in 1994, adding side structure and interior padding weight requirements.

A regulation is expected for other interior padding to reduce head injuries in crashes.

A regulation to design car front-end to mitigate pedesterian injuries which could reduce the effectiveness of some aerodynamic designs.

The industry is increasingly offering optional anti-lock brake systems on passenger cars which are excellent additions for braking stability on slippery surfaces but then add 20–50 pounds to each vehicle.

For trucks, vans and sport/utilities:

New roofcrush standards are specified for model year 1992.

Head restraints will be required in model year 1992. Rear seat lap/shoulder belts are required for model year 1992.

Side impact protecting door beams are proposed for model year 1993.

Passive restraints are proposed by regulation starting in model year 1994.

Center high-mounted stop lamps are proposed for model year 1994.

Side impact protection incorporating a full vehicle crash test is proposed for model year 1995.

The load of legislation and regulation facing the auto industry over the next five years is unprecedented. Engineering resources will be stretched to the limit to continue development of the kind of products demanded by consumers while at the same time incorporating the long list of safety and environmental features mandated by law.

Likewise, financial resources of auto companies will be severely pressed by these mandates, particularly as worldwide competition in the auto market intensifies.

Those of us with the responsibility for the regulatory burden imposed on this industry and the jobs which may be affected by our actions must be deeply concerned about this "piling on" of regulations and its consequences.

In conclusion, S. 279 should not be passed by the Senate. It threatens to impose substantially higher costs—from increased highway safety risks, to losses of American jobs, to reductions in consumer choices, to increases in vehicle prices, to potentially serious damage to the competitive positions of U.S. automobile manufacturers—with little in the way of measurable benefits.

The U.S. motor vehicle industy has demonstrated its commitment to increased fuel efficiency by increasing fuel economy of its vehicles. The American consumer has available today many choices of high mileage vehicles. They are on sale today. The American car purchasers can choose these cars, but should not be deprived of the right to choose others that may better meet their needs.

Finally, the President's senior advisors would recomended that the President veto this legislation. We oppose S. 279, and points when evaluating its merit.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new material is printed in italic, existing law in which no change is proposed is shown in roman):

MOTOR VEHICLE INFORMATION AND COST SAVINGS ACT

Section 502 of that Act

AVERAGE FUEL ECONOMY STANDARDS APPLICABLE TO EACH MANUFACTURER

SEC. 502. (a)(1) Except as otherwise provided in paragraph (4) or in subsection (c) or (d), the average fuel economy for passenger automobiles manufactured by any manufacturer in any model year after model year 1977 shall not be less than the number of miles per gallon established for such model year under the following table:

Model year:	Average fuel economy standard (in miles per gallon)
1978	18.0.
1979	19.0.
1980	20.0.
1981	Determined by Secretary under paragraph (3) of this subsection.
1982	Determined by Secretary under paragraph (3) of this subsection.
1983	Determined by Secretary under paragraph (3) of this subsection.
1984	Determined by Secretary under paragraph (3) of this subsection.
[1985 and thereafter	27.5.]
1985 through 1995	*27.5.*
1996 and thereafter	*As provided in accordance with section 514 of this Act.*

(2) through (3) * * *

(4) [The Secretary] *Except in the case of standards established by section 514, the Secretary* may, by rule, amend the average fuel economy standard specified in paragraph (1) for model year 1985,

or for any subsequent model year, to a level which he determines is the maximum feasible average fuel economy level for such model year, except that any amendment which has the effect of increasing an average fuel economy standard to a level in excess of 27.5 miles per gallon, or of decreasing any such standard to a level below 26.0 miles per gallon, shall be submitted to the Congress in accordance with section 551 of the Energy Policy and Conservation Act, and shall not take effect if either House of the Congress disapproves such amendment in accordance with the procedures specified in such section.

(5) * * *

(b) The Secretary shall, by rule, prescribe average fuel economy standards for automobiles which are not passenger automobiles and which are manufactured by any manufacturer in each model year which begins more than 30 months after the date of enactment of this title *and which ends before model year 1996.* Such rules may provide for separate standards for different classes of such automobiles (as determined by the Secretary), and such standards shall be set at a level which the Secretary determines is the maximum feasible average fuel economy level which such manufacturers are able to achieve in each model year to which this subsection applies. Any standard applicable to a model year under this subsection shall be prescribed at least 18 months prior to the beginning of such model year.

(c)(1) On application of a manufacturer who manufactured (whether or not in the United States) fewer than 10,000 [passenger] automobiles in the second model year preceding the model year for which the application is made, the Secretary may, by rule, exempt such manufacturer from subsection (a) *or (b), or section 514 or 515.* An application for such an exemption shall be submitted to the Secretary, and shall contain such information as the Secretary may require by rule. Such exemption may only be granted if the Secretary determines that the average fuel economy standard otherwise applicable under subsection (a) *or (b), or section 514 or 515,* is more stringent than the maximum feasible average fuel economy level which such manufacturer can attain. The Secretary may not issue exemptions with respect to a model year unless he establishes, by rule, alternative average fuel economy standards for [passenger] automobiles manufactured by manufacturers which receive exemptions under this subsection. Such standards may be established for an individual manufacturer, for all automobiles to which this subsection applies, or for such classes of such automobiles as the Secretary may define by rule. Each such standard shall be set at a level which the Secretary determines is the maximum feasible average fuel economy level for the manufacturers to which the standard applies. An exemption under this subsection shall apply to a model year only if the manufacturer manufactures (whether or not in the United States) fewer than 10,000 [passenger] automobiles in such model year.

(2) * * *

(d) through (f) * * *

(g)(1) At the election of any manufacturer, the fuel economy of any emergency vehicle shall not be taken into account in applying any fuel economy standard prescribed by or under subsection (a),

(b), or (c) *or section 514 or 515*. Any manufacturer electing to have the provisions of this subsection shall provide written notice of that election to the Secretary and to the Environmental Protection Agency Administrator.

(2) * * *

(h) * * *

(i) The Secretary shall consult with the Secretary of Energy in carrying out his responsibilities under this section *and sections 514 and 515*. The Secretary shall, before issuing any notice proposing under subsection (a), (b), (d), or (f) of this section, to establish, reduce, or amend an average fuel economy standard, provide the Secretary of Energy with a period of not less than ten days from the receipt of the notice during which the Secretary of Energy may, upon concluding that the proposed standard would adversely affect the conservation goals set by the Secretary of Energy, provide written comments to the Secretary concerning the impacts of the proposed standard upon those goals. To the extent that the Secretary does not revise the proposed standard to take into account any comments by the Secretary of Energy regarding the level of the proposed standard, the Secretary shall include the unaccommodated comments in the notice.

(j) The Secretary shall, before taking action an any final standard under this section *or section 514 and 515,* or any modification of or exemption from such standard, notify the Secretary of Energy and provide such Secretary with a reasonable period of time to comment thereon.

(k) * * *

(l) (1)(A) For purposes of this part, credits under this subsection shall be considered to be available to any manufacturer upon the completion of the model year in which such credits are earned under subparagraph (B) unless under subparagraph (C) the credits are made available for use at a time prior to the model year in which earned.

(B) Whenever the average fuel economy of the passenger automobiles manufactured by a manufacturer in a particular model year exceeds an applicable average fuel economy standard established under subsection (a) or (c) (determined by the Secretary without regard to any adjustment under subsection (d) or any credit under this subsection) *or section 514*, such manufacturer shall be entitled to a credit, calculated under subparagraph (C), which—

(i) * * *

(ii) * * *

(C)(i) through (iii) * * *

(iv) The Secretary shall provide notice to any manufacturer in any case in which the average fuel economy of that manufacturer is below the applicable standard under subsection (a) or (c) *or section 514*, after taking into account credits available under subparagraph (B)(i), and afford the manufacturer a reasonable period (of not less than 60 days) in which to submit a plan under this subparagraph.

(D) The amount of credit to which a manufacturer is entitled under this paragraph shall be equal to—

(i) the number of tenths of a mile per gallon by which the average fuel economy of the passenger automobiles manufac-

tured by such manufacturer in the model year in which the credit is earned pursuant to this paragraph exceeds the applicable average fuel economy standard established under subsection (a) or (c) *or section 514*, multiplied by

(ii) the total number of passenger automobiles manufactured by such manufacturer during such model year.

(E) * * *

(2) Credits for manufacturers of automobiles which are not passenger automobiles shall be earned and be available to be taken into account for model years in which the average fuel economy of such class of automobiles is below the applicable average fuel economy standard established under subsection (b) *or section 515* to the same extent and in the same manner as provided for under paragraph (1). Not later than 60 days after the date of the enactment of this subsection *the Motor Vehicle Fuel Efficiency Act*, the Secretary shall prescribe regulations to carry out the provisions of this paragraph.

(3) through (4) * * *

Section 503 of that Act

DETERMINATION OF AVERAGE FUEL ECONOMY

SEC. 503. (a)(1) Average fuel economy for purposes of section 502 (a) and (c) *and section 514* shall be calculated by the EPA Administrator by dividing—

(A) the total number of passenger automobiles manufactured in a given model year by a manufacturer, by

(B) a sum of terms, each term of which is a fraction created by dividing—

(i) the number of passenger automobiles of a given model type manufactured by such manufacturer in such model year, by

(ii) the fuel economy measured for such model type.

(2) Average fuel economy for purposes of section 502(b) shall be calculated in accordance with rules of the EPA Administrator. *Average fuel economy for purposes of section 515 shall be calculated in accordance with rules of the EPA Administrator that are based upon the method required in paragraph (1) for calculation of average fuel economy of passenger automobiles.*

(3) * * *

(b) through (f) * * *

Section 504 of that Act

JUDICIAL REVIEW

SEC. 504. (a) Any person who may be adversely affected by any rule prescribed under section 501, 502, 503, [or 506] *506, 514, 515, or 516* may, at any time prior to 60 days after such rule is prescribed (or in the case of an amendment submitted to each House of the Congress under section 502(a)(4), at any time prior to 60 days after the expiration of the 60-day period specified in section 502(a)(5)), file a petition in the United States Court of Appeals for

the District of Columbia, or for any circuit wherein such person resides or has his principal place of business, for judicial review of such rule. A copy of the petition shall be forthwith transmitted by the clerk of such court to the officer who prescribed the rule. Such officer shall thereupon cause to be filed in such court the written submissions and other materials in the proceeding upon which such rule was based. Upon the filing of such petition, the court shall have jurisdiction to review the rule in accordance with chapter 7 of title 5, United States Code, and to grant appropriate relief as provided in such chapter. Findings of the Secretary under section 502(d) shall be set aside by the court on review unless such findings are supported by substantial evidence.

(b) through (d) * * *

Section 506 of that Act

LABELING

SEC. 506. (a) * * *

(b)(1) The EPA Administrator shall compile and prepare a simple and readily understandable booklet containing data on fuel economy of automobiles manufactured in each model year. Such booklet shall also contain information with respect to estimated annual fuel costs, and may contain information with respect to geographical or other differences in estimated annual fuel costs. The Administrator of the Federal Energy Administration shall publish and distribute such booklets. *The Secretary of Energy shall distribute no less than 100 booklets each year to each dealer and shall distribute as many in addition to 100 booklets as are reasonably requested by dealers from time to time.*

(2) * * *

(c) through (d) * * *

(e) In carrying out his duties under this section, the EPA Administrator shall consult with the Federal Trade Commission, the Secretary, and the [Federal Energy Administrator] *Secretary of Energy.*

Section 507 of that Act

UNLAWFUL CONDUCT

SEC. 507. (a) Subject to subsection (b), the following conduct is unlawful:

(1) the failure of any manufacturer to comply with any average fuel economy standard applicable to such manufacturer under section 502 (other than section 502(b)) *and section 514,*

(2) the failure of any manufacturer to comply with any average fuel economy standard applicable to such manufacturer under [section 502(b)] *sections 502(b) and 515,* or

(3) the failure of any person (A) to comply with any provision of this part applicable to such person (other than section 502, 506(a), 510, or 511), or (B) to comply with any standard, rule, or order applicable to such person which is issued pursuant to such a provision.

(b) * * *

Section 508 of that Act

CIVIL PENALTY

SEC. 508. (a) * * *
(b)(1)(A) * * *
(B) * * *

(C) Any civil penalty assessed under this subsection for a violation of section 507(a) (1) or (2) in model yar 1996 or thereafter against a manuacturer shall be doubled if—

(i) the manufacturer violated section 507(a) (1) or (2) in the two model years immediately preceding the model year involved in the assessment; and

(ii) during each of such preceding years and the year involved in the assessment, the applicable average fuel economy standard exceeded the average fuel economy of the automatic manufacturered by such manufacturer by 0.5 miles per gallon or more.

(2) through (6) * * *

(7)(A) The maximum penalty amounts authorized in paragraphs (1) and (2) shall be adjusted for inflation as provided in this paragraph.

(B) No less than 3 months prior to model year 1992, and no less than 3 months prior to each model year thereafter, the Secretary shall prescribe and publish in the Federal Register a schedule of maximum authorized penalties that shall apply for violations that occur with respect to the model year immediately following such publication.

(C) The schedule of maximum authorized penalties shall be prescribed by increasing each of the amounts referred to in paragraphs (1) and (2) by the inflation adjustment for the preceding model year, as calculated by the Secretary on the basis of the Consumer Price Index.

(D) For purposes of this paragraph, the term "Consumer Price Index" means the Consumer Price Index for all-urban consumers published by the Department of Labor.

(c) through (e) * * *

Section 513 of that Act

MANUFACTURING INCENTIVES FOR AUTOMOBILES

SEC. 513. * * *

PASSENGER AUTOMOBILES

SEC. 514. Notwithstanding any other provision of this Act, the average fuel economy for passenger automobiles manufactured by any manufacturer in model year 1996 and each model year thereafter shall not be less than the number of miles per gallon established for such model year pursuant to the following:

Model year:	
1996 through 2000	*For each such manufacturer, the average fuel economy required shall be an amount determined by the Secretary to be equal to the average fuel economy achieved by that manufacturer for passenger automobiles in model year 1988, plus an amount equal to 20 percent (as measured in miles per gallon) of such average fuel economy achieved for model year 1988, unless such standard is modified under section 516; except that such standard shall not be less than 27.5 miles per gallon and shall not exceed 40 miles per gallon.*
2001 and thereafter	*For each such manufacturer, the average fuel economy required shall be an amount determined by the Secretary to be equal to the average fuel economy achieved by that manufacturer for passenger automobiles in model year 1988, plus an amount equal to 40 percent (as measured in miles per gallon) of such average fuel economy achieved for model year 1988, unless such standard is modified under section 516; except that such standard shall not be less than 33 miles per gallon and shall not exceed 45 miles per gallon.*

AUTOMOBILES OTHER THAN PASSENGER AUTOMOBILES

SEC. 515. Notwithstanding any other provision of this Act, commencing with model year 1996 and each model year thereafter, the average fuel economy for authomobiles other than passenger automobiles manufactured by any manufacturer in any such model year shall not be less than the number of miles per gallon established for such model year pursuant to the following:

Model year:	
1996 through 2000	*For each such manufacturer, the average fuel economy required shall be an amount determined by the Secretary to be equal to the average fuel economy achieved by that manufacturer for light trucks in model year 1988, plus an amount equal to 20 percent (as measured in miles per gallon) of such average fuel economy achieved for model year 1988, unless such standard is modified under section 516; except that such standard shall not be less than 20 miles per gallon and shall not exceed 30 miles per gallon.*
2001 and thereafter	*For each such manufacturer, the average fuel economy required shall be an amount determined by the Secretary to be equal to the average fuel economy achieved by that manufacturer for light trucks in model year 1988, plus an amount equal to 40 percent (as measured in miles per gallon) of such average fuel economy achieved for model year 1988, unless such standard is modified under section 516; except that such standard shall not be less than 24 miles per gallon and shall not exceed 35 miles per gallon.*

MODIFICATIONS OF STANDARDS

SEC. 516.(a)(1) The Secretary may modify any average fuel economy standard established under this Act for model year 1996 and thereafter in accordance with this section. In response to a petition from any person that is filed at least 12 months in advance of the model year to which it is applicable, the Secretary shall conduct a rulemaking proceeding to determine whether to increase or decrease such standard to the level which the Secretary determines is the maximum feasible average fuel economy for that model year (taking into consideration the factors listed in section 502(e) and the need to reduce carbon dioxide emissions). The Secretary may also conduct such a rulemaking proceeding on the Secretary's own initiative.

(2)(A) Under such proceeding, the Secretary shall not reduce any such standard below a level equal to the average fuel economy achieved by the involved manufacturer for model year 1988, as multiplied by the applicale percentage set forth in subparagraph (B).

(B) The applicable percentage referred to in subparagraph (A) is—

(i) 115 percent, for model years 1996 through 2000; and

(ii) 130 percent, for model years 2001 and thereafter.

(b)(1) In determining the maximum feasible average fuel economy during a rulemaking proceeding under this section, the Secretary shall weigh equally each factor listed in section 502(e) and the need to reduce carbon dioxide emissions.

(2) In evaluatin the technological feasibility of the standard, the Secretary shall consider the primary uses of such automobiles and the impact of the standard on the ability of such automobiles to perform those uses. The Secretary shall exclude consideration of any automobile whose power-to-weight ratio excees by more than 10 percent the average power-to-weight ratio of its model type in the model year 1988 fleet, as defined and determined by the EPA Administrator and furnished to the Secretary.

(3) In evaluating the economic practicability of the standard, the Secretary shall consider—

(A) the economic impact of the standrd on the manufacturers and on the consumers of the automobiles subject to such standard;

(B) the savings in operating costs throughout the estimated average life of the automobiles compared to any increased in the price of, or in the initial charges for, or maintenance expenses of, the automobiles which are likely to result from the imposition of the standard;

(C) the total projected amount of enery savings likely to result directly from the imposition of the standard and the economic impact of such enery savings;

(D) any lessening of the utility or the performance of the automobiles likely to result from the imposition of the standard;

(E) the impact of any lessening of competition or any change in foreign trade that is likely to result from the imposition of the standard;

(F) the total projected amount of reduction in carbon dioxide emissions and the economic impact of such reduction; and

(G) other factors the Secretary considers relevant.

(4) In evaluating other Federal motor vehicle standards, the Secretary shall consider the impact of the average fuel economy standard on the ability of such automobiles to adequately meet such other motor vehicle standards, including those designed to protect the driver and any passengers of any such automobile.

(5) In evaluating the need of the Nation to conserve energy, the Secretary shall consider the fuel savings and reduciton in carbon dioxide and traffic congestion in urban areas realized by car pooling in automobiles with seating for the driver and six or more passengers.

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